

ABSTRACT

A method, apparatus and network for transporting layer-2 frames, such as Ethernet MAC, ATM AAL5, and Frame Relay, over MPLS, SONET/SDH, or OTN optical transport networks as well as electrical transport networks is disclosed. The method establishes "pseudo-wires" between, for example, routers, Layer-2 packet switches, or SONET/SDH switches. Inter-related ingress and egress resource tables may be used by provider edge nodes to negotiate consistently managed data tunnels across a provider network on behalf of data flowing from/to a diverse base of customer edge nodes. Detailed network resource information particular to each of the data flows is exchanged between provider edge nodes during the creation of pseudo-wires. Admission control algorithms are applied at the ingress and egress points in order to manage the data flows into a provider network and exiting from a provider network to customer equipment. By applying pseudo-wire shuffling and preemption techniques, the providers can make better use of their network resources by admitting more pseudo-wires.